WAPAC

Water-Use Reporting Committee

Presentation to WAPAC

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Committee Mission Statement

- Review water use data, identify gaps in the two pilot basins and recommend methods for addressing those gaps.

Deliverables

- An evaluation of programs in other states and their relation to an overall allocation approach

- A written proposal for a water-use reporting system, or other approaches which:
  - o Evaluate program need, the menu of options and the preferred approach
  - o Assess the sufficiency of existing data
  - o Estimate the costs and timing associated with program development, implementation and maintenance

Water-Use Reporting Policy in RI

- ***State Guide Plan Element 721***

  - Establish a ***statewide water and wastewater information system*** which would incorporate existing databases and significantly ***upgrade the collection of uniform data***
  - Adopt a regionalized ***statewide monitoring system to monitor changing supply/demand balances***...Develop a trigger planning program for drought, emergency response and planning

Why do we need to know who is using what, when and from where?

- Allows WRB to conduct a comprehensive and detailed inventory of the water resources of the state on a current and valid basis as required by RIGL 46-15.7, so as to:
  - accurately evaluate the timing and quantity of demand for water so as to assess capacity of state's water resources to meet current and future demands;
  - identify waters where existing demand has reached or threatens to approach or exceed safe yield (meaning that either the uses are not sustainable or have resulted in adverse effects)

How will the the data be used?

- water supply and wastewater treatment facilities planning
- drought management
- tracking and evaluation of out-of-basin transfers
- evaluation of environmental impacts of proposed new withdrawals on the water resource, adjacent freshwater wetlands and water quality
- application of state-of-the-art hydrologic models to optimize water resource management

Water-Use Reporting in Other States

- Every state has a particular water use environment, different state laws and a “patchwork quilt” of data collection systems
- In most states, the same rules apply to surface water and groundwater withdrawals
- Various thresholds are evident ranging from >10,000 GPD to >250,000 GPD (of 16 eastern states, 50% < 20,000GPD and 50% over 100,000GPD)
- Most states require reporting based on a 1-year average for all users and a 3-month average for seasonal users

Water-Use Reporting in Other States - *Cont'd*

- 10 states, including MA, NH, VT, NJ, DEL
  - Have legal authority to register or permit withdrawals
  - Require data collection for monthly water use, updated annually
  - Require collection of location data (latitude/longitude)
- 12 states, including MD and VA
  - Require data annually, and require location data
- 28 states, including CT, RI, ME, NY, PA
  - Programs vary significantly
  - Data may not be collected for all users or for the entire state

  – Major disparities in quality and quantity of water use data collected

  – High quality data that is consistent with need is best

Current Sources of "Water" Data in RI

- RI Dept. of Administration/Univ. of RI
- RI Dept. of Environmental Mgt.
- RI Dept. of Health
- RI Water Resources Board
- Narragansett Bay Commission
- Univ. of RI-Cooperative Extension
- MA Dept. of Environmental Protection
- US Geological Survey
- Natural Resources Conservation Service
- Golf Courses in RI

Identification of Data Gaps

- Looked at data gaps for water-use categories:
  - **Public Water Withdrawals**
    - **Major - WSSMP**
    - **Minor – domestic establishments**
  - **Self-Supplied**
    - **Domestic**
    - **Commercial and Industrial**
    - **Agricultural**

Major Public Water Withdrawals

- Suppliers are self-metered
- Data usefulness may be limited by frequency of collection
- Infrastructure largely in place to gather necessary information

Minor Public Water Withdrawals

- Currently estimated based on per capita water-use coefficient
- Estimation considered to be sufficient for small suppliers

Self-Supplied Domestic

- Currently estimated based on a per capita water-use coefficient
- Estimation technique thought to provide adequate accuracy
- Seasonal use coefficients may need to be considered in some areas
  - Why? To evaluate significant increases in peak demand associated with outdoor water use and seasonal population increases

Self-Supplied Commercial

- Currently estimated using SIC codes, IWR-MAIN coefficients, and number of employees
- Coefficients produce uneven results when compared to metered data
- Estimation is thought to be sufficient for withdrawals below a threshold

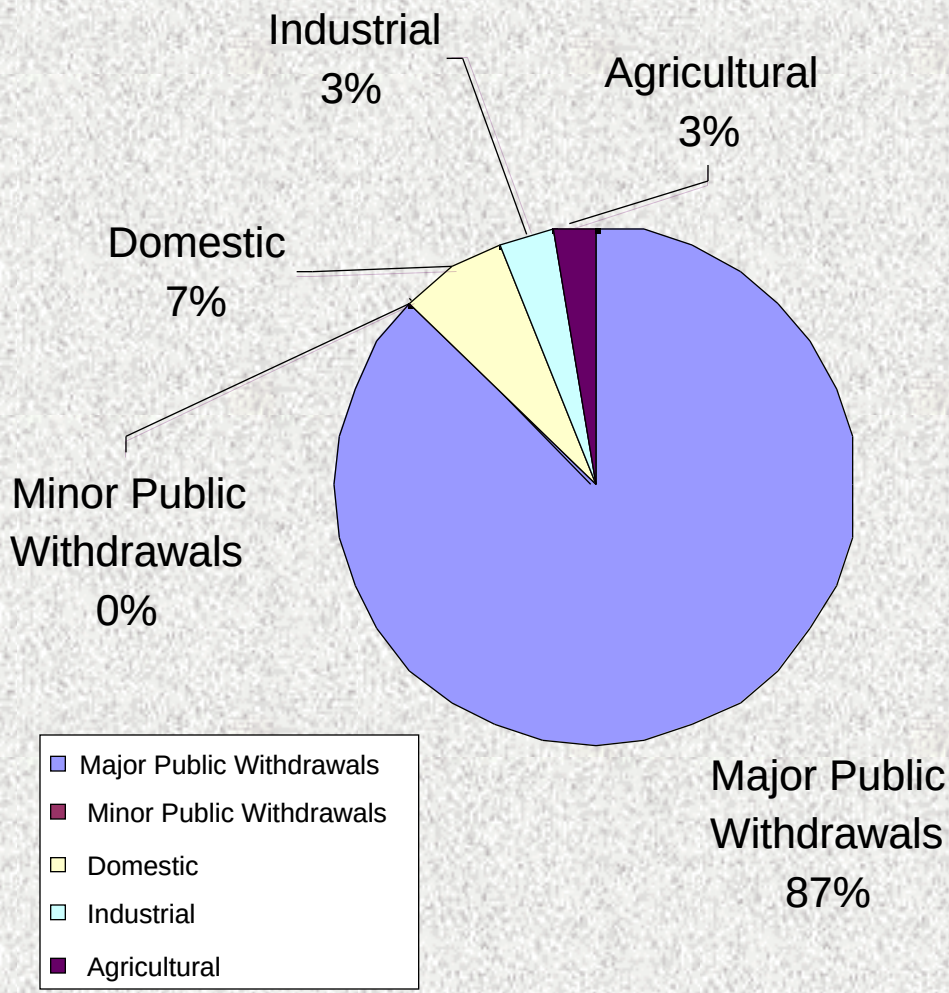
Self-Supplied Industrial

- Currently estimated using SIC codes, IWR-MAIN coefficients, and number of employees
- Coefficients produce uneven results when compared to metered data
- Estimation is thought to be sufficient for withdrawals below threshold

Self-Supplied Agricultural

- Currently estimated using USGS water-use coefficients for crop irrigation, golf course irrigation, and livestock
- Coefficients produce uneven results when compared to metered data, however RI specific coefficients are being studied that improve estimation
- Estimation is thought to be sufficient for withdrawals below threshold
- Seasonal use must be considered whether using estimation or metering
- One member felt that current estimation techniques are adequate

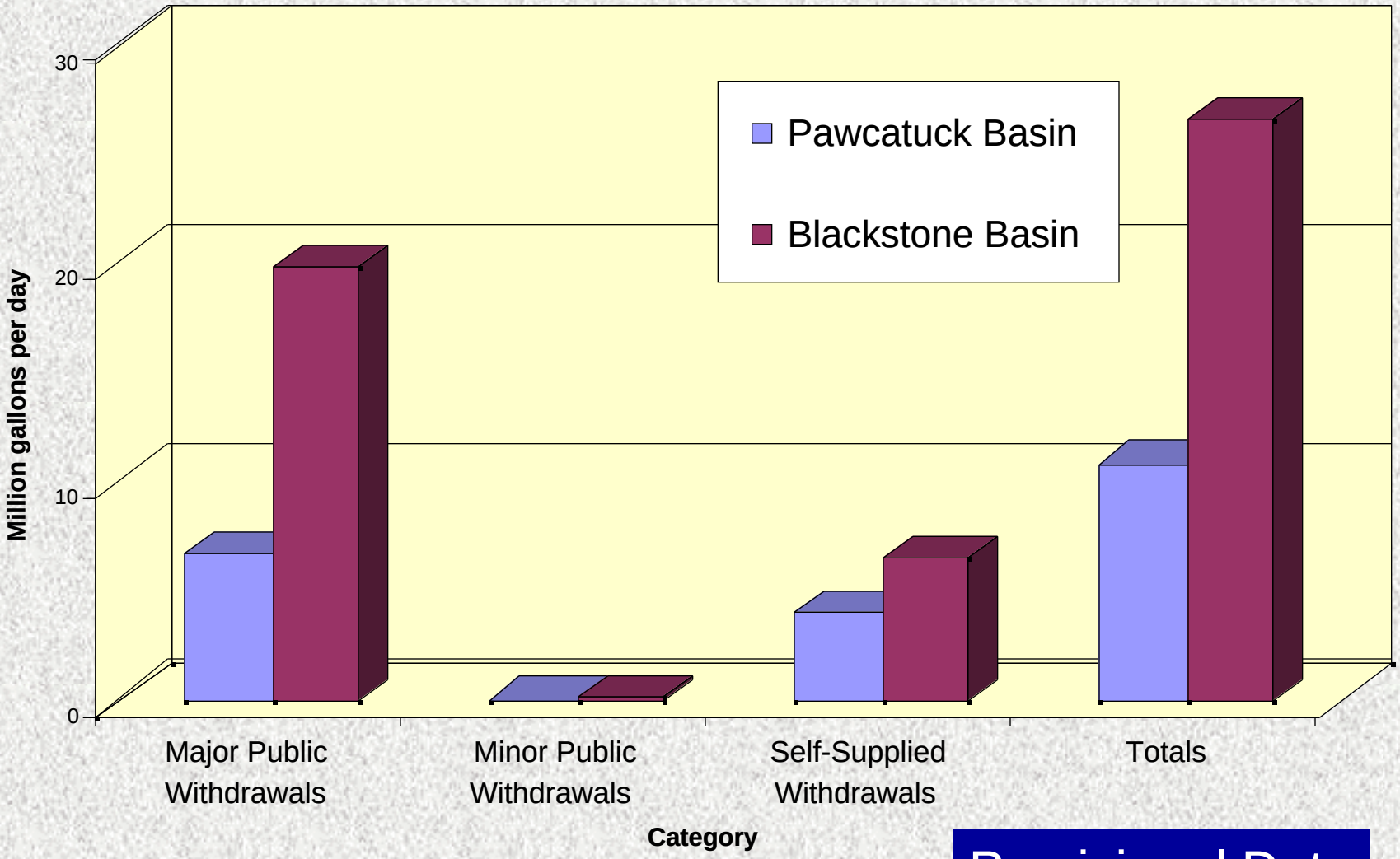
Rhode Island Water Use 2000



Provisional Data

USGS
science for a changing world

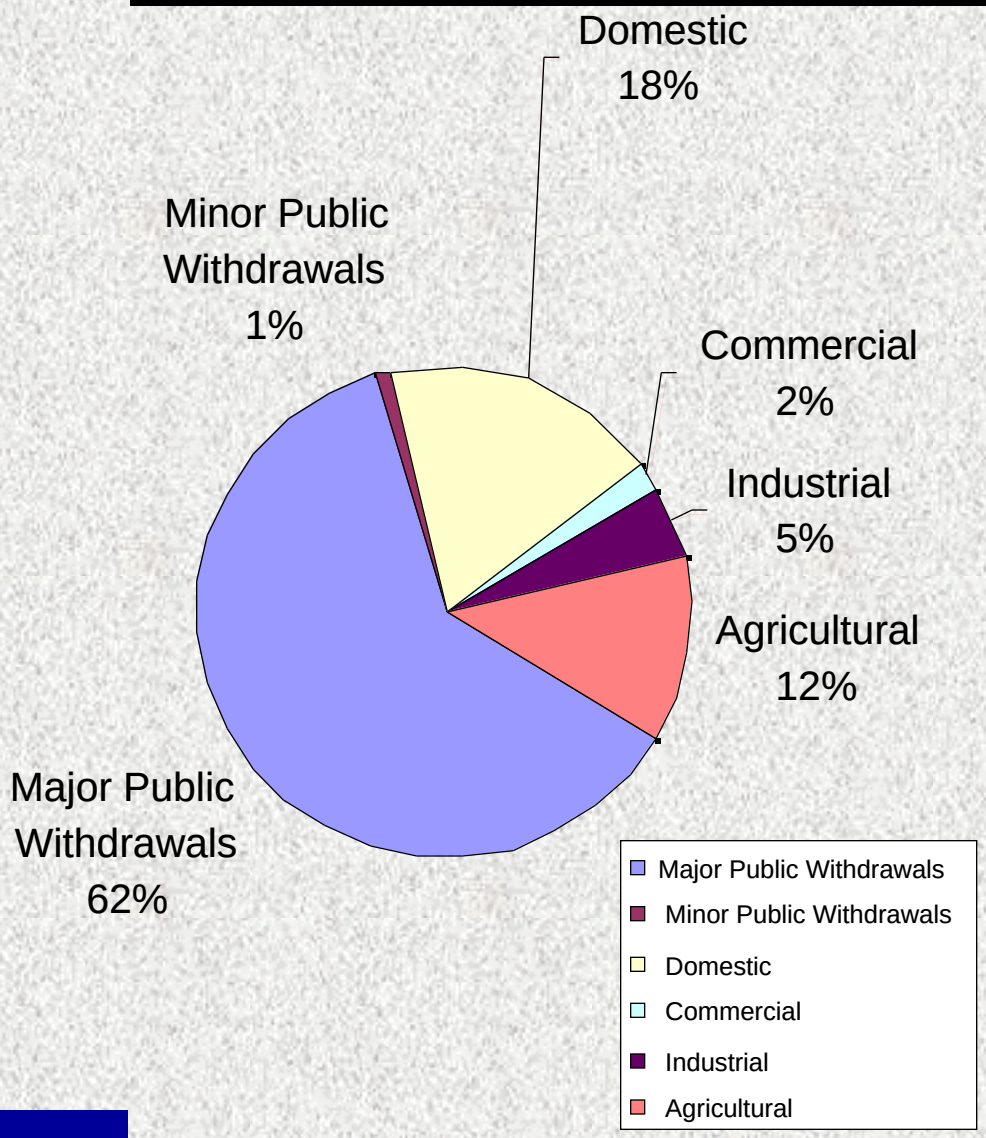
Average Basin Withdrawals, 1995-99



Provisional Data

USGS science for a changing world

Pawcatuck Basin Withdrawals by Category



Provisional Data

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science for a changing world

Summary – Major Suppliers

- WSSMP provides existing infrastructure to capture approximately 84% of statewide public-supply use
- Data gaps –
  - Deliveries vs withdrawals
  - Uniformity of reporting period (fiscal vs calendar)
  - Monthly withdrawal data
  - Reporting by water-use category (software/accounting issue)

Reporting by "Major" Public Water Suppliers Recommendations

- ✓ Report annually (calendar year):
- ✓ Monthly data:
  - Production by source
    - Break out sales to and from other suppliers
- ✓ Quarterly data:
  - Water use by category, as defined by WSSMPs and NEWUDS

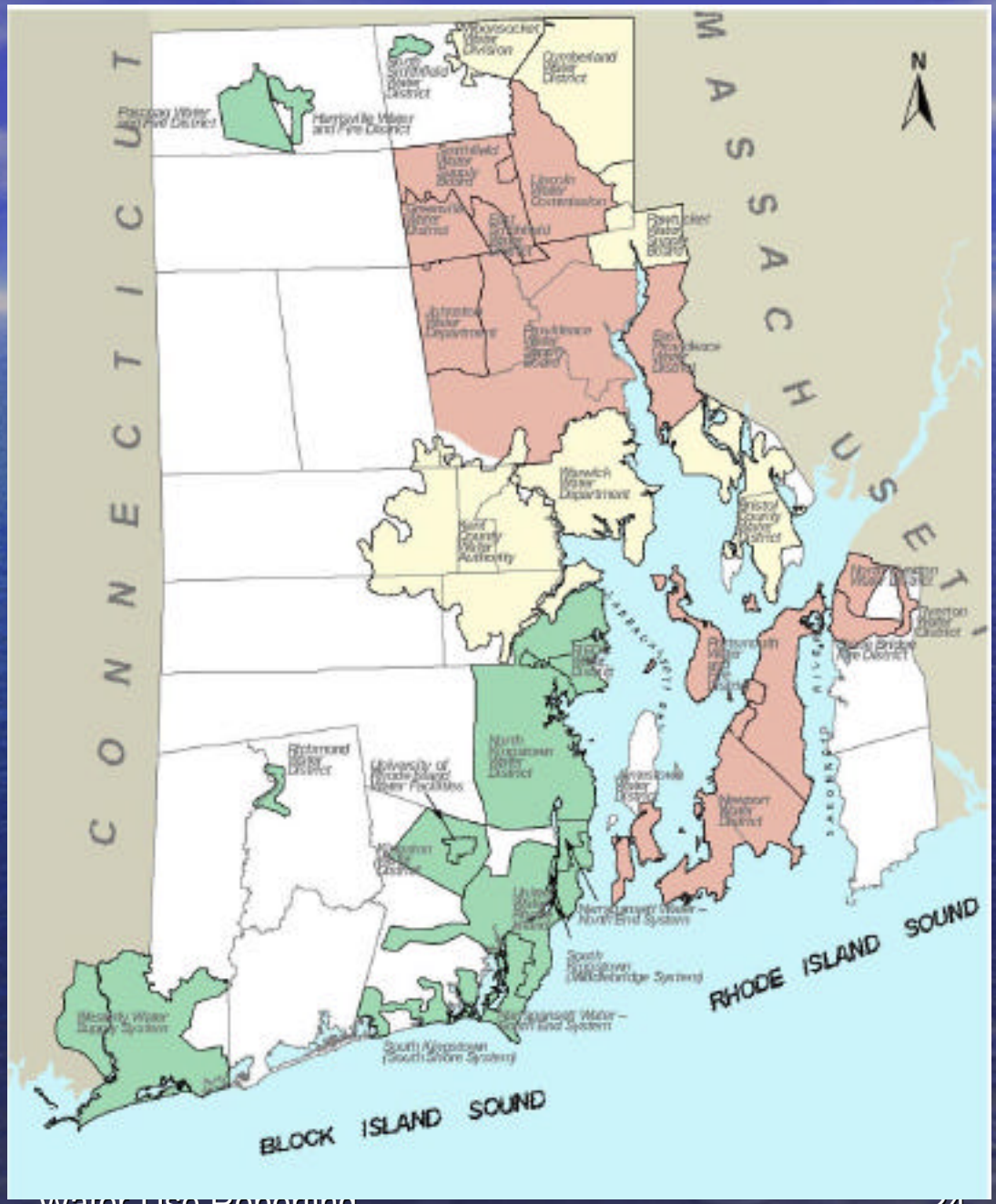
Reporting by "Major" Public Water Suppliers Recommendations

- ✓ Standardize data collection
- ✓ Report on the billing cycle until such time that accounting/metering systems are upgraded but no later than 2010
- ✓ Implement by amending the WSSMP regulations

Summary – Self Supply

- Currently estimated using water-use coefficients
- Data gaps -
  - relatively accurate estimation of domestic use
  - potential for significant estimation errors in commercial, industrial, institutional and agricultural use
  - Impact of estimation errors greatest in basins with significant self-supply

Areas currently served by public water suppliers



Reporting by "Self-Supply" Users Recommendations

- ✓ Reporting above a threshold for minor public suppliers and self-supply users.
- ✓ Voluntary reporting of metered data or other other accurate method of measurement accepted by the Water Resources Board beginning January 2005
- ✓ Mandatory reporting by January 2007
- ✓ Implement through legislation

Reporting Threshold

- Adopt threshold consistent with “major user” reporting in WSSMPs
- 3 million gallons/year annualized use (>8,200 gallons/day or >740,000 gallons over a three-month period)
- Expect to capture ~250-300 “major users”

Structure of Water-Use Reporting System

- Three categories of users
  1. Majors suppliers subject to WSSMP
  2. Major self-supply users (> threshold)
  3. Minor self-supply users (< threshold)
- Reporting requirements
  1. Metered data for major suppliers
  2. Metered or other WRB approved reporting method for major self-supply users
  3. None for minor self-supply users

Other Areas to Explore

- Implementation and Management Considerations
  - Timeline
    - January 2005 – voluntary
    - January 2007 – mandatory
  - Identifying users required to report
    - Use water-use coefficients to calculate preliminary use estimate and potential reporting list
  - Incentives for reporting during voluntary phase
  - Funding
    - ?